








## Connector, Insulated Aluminum Compression



### 1. Scope

This standard covers the requirements for insulated aluminum compression connectors. Insulated aluminum compression connectors are also known as service entrance splices.

This standard applies to the following Seattle City Light (SCL) stock numbers:

| Stock No. | Color End Cap A  | Color End Cap B  |
|-----------|--|--|
| 650554    | Blue    | Green   |
| 014189    | Blue    | Blue    |
| 650557    | Orange  | Green   |
| 650558    | Orange  | Blue    |
| 650559    | Orange  | Orange  |
| 650561    | Red     | Green   |
| 650562    | Red     | Blue    |
| 650563    | Red     | Orange  |
| 650564    | Red     | Red     |
| 650565    | Yellow  | Red     |
| 650567    | Yellow  | Blue    |
| 650568    | Yellow  | Orange  |
| 650569    | Yellow  | Yellow  |

### 2. Application

Insulated compression connectors may be used for aluminum-to-aluminum and aluminum-to-copper connections. Insulated compression connectors are typically used for overhead service entrance connectors.

Insulated compression connectors are prefilled with oxide inhibitor.

Standards Coordinator  
Kathy Tilley

Standards Supervisor  
John Shipek

Unit Director  
Darnell Cola

### 3. Industry Standards

Insulated compression connectors shall meet the applicable requirements of the latest revision of the following industry standards:

**ANSI C119.4**; American National Standard for Electric Connectors—Connectors for Use Between Aluminum-to-Aluminum and Aluminum-to-Copper Conductors Designed for Normal Operation at or Below 93° C and Copper-to-Copper Conductors Designed for Normal Operation at or Below 100 °C

**ASTM D1248**; Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable

**ASTM D4066**; Standard Classification System for Nylon Injection and Extrusion Materials

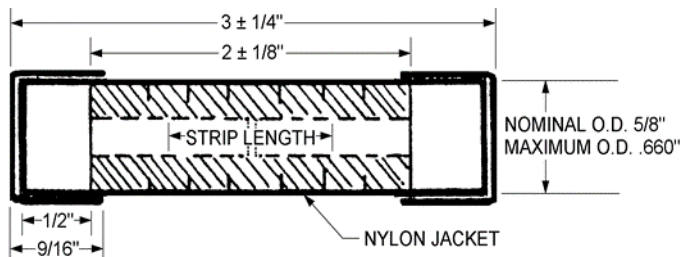
**ASTM D566**; Standard Test Method for Dropping Point of Lubricating Grease

### 4. Requirements

#### 4.1 Material and Dimensions

Compression connector shall be made of 1350 grade aluminum and configured as detailed in Figure 4.1 and Table 4.1.

**Figure 4.1 Connector Configuration**



**Table 4.1 Size and Color Code – Aluminum or Copper**

| Stock No. | Conductor A |          |             |        | Conductor B |          |             |        |
|-----------|-------------|----------|-------------|--------|-------------|----------|-------------|--------|
|           | Solid       | Stranded | ACSR        | Color  | Solid       | Stranded | ACSR        | Color  |
| 650554    | #4          | –        | #6-6/1      | Blue   | #6          | #8       | –           | Green  |
| 014189    | #4          | –        | #6-6/1      | Blue   | #4          | –        | #6-6/1      | Blue   |
| 650557    | #2          | –        | #4-6/1, 7/1 | Orange | #6          | #8       | –           | Green  |
| 650558    | #2          | –        | #4-6/1, 7/1 | Orange | #4          | –        | #6-6/1      | Blue   |
| 650559    | #2          | –        | #4-6/1, 7/1 | Orange | #2          | –        | #4 6/1, 7/1 | Orange |
| 650561    | #1          | #1 & #2  | #2-6/1, 7/1 | Red    | #6          | #8       | –           | Green  |
| 650562    | #1          | #1 & #2  | #2-6/1, 7/1 | Red    | #4          | #5 & #6  | #6-6/1      | Blue   |
| 650563    | #1          | #1 & #2  | #2-6/1, 7/1 | Red    | #2          | #3 & #4  | #4 6/1, 7/1 | Orange |
| 650564    | #1          | #1 & #2  | #2-6/1, 7/1 | Red    | #1          | #1 & #2  | #2 6/1, 7/1 | Red    |
| 650565    | #1          | 1/0      | 1/0-6/1     | Yellow | #1          | #1 & #2  | #2 6/1      | Red    |
| 650567    | #1          | 1/0      | 1/0-6/1     | Yellow | #4          | –        | #6-6/1      | Blue   |
| 650568    | #1          | 1/0      | 1/0-6/1     | Yellow | #2          | –        | #4-6/1      | Orange |
| 650569    | #1          | 1/0      | 1/0-6/1     | Yellow | –           | 1/0      | 1/0-6/1     | Yellow |

#### 4.2 Jacket

The jacket for the compression connector shall be covered with a nylon insulating jacket.

The nylon jacket shall be securely anchored to the connector to prevent the jacket from slipping during compression.

#### 4.3 End Caps

The end caps shall be made of polyethylene conforming to ASTM D1248, Class C. The end caps shall be color-coded as cited in Table 4.1.

#### 4.4 Inhibitor

Compression connectors shall be factory-filled with a measured amount of oxide-inhibiting compound. The dropping point of the inhibitor shall meet the requirements as stated in ASTM D566.

#### 4.5 Installing Tool and Die

The connector shall be designed to be installed with any of the following tools and dies and the given number of crimps on each end as stated in table 4.5.

**Table 4.5**

| Tool             | Kearny | Thomas & Betts | Thomas & Betts | Burndy | Burndy | Burndy |
|------------------|--------|----------------|----------------|--------|--------|--------|
| Die Code         | 5/8    | TU             | 52             | BG     | W-BG   | U-BG   |
| Number of Crimps | 3      | 3              | 1              | 3      | 1      | 1      |

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#### 5. Marking

Each connector shall have durable markings showing the following information:

- Conductor size
- Die number
- Number of crimps
- Strip length
- Manufacturer name or trademark and catalog number

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#### 6. Packaging

Compression connectors shall be packaged to prevent damage during shipping, storage, and handling.

Each package shall be legibly marked with the following information:

- Manufacturer identification
- Quantity
- Product description
- Seattle City Light purchase order number

























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#### 7. Issuance

Stock Unit: EA

## 8. Approved Manufacturer

Thomas and Betts / Blackburn (formerly Homac)

| Stock No. | Color End Cap A   | Color End Cap B   | Catalog No. |
|-----------|---|---|-------------|
| 650554    | Blue     | Green    | U1N68       |
| 014189    | Blue     | Blue     | U1N66       |
| 650557    | Orange   | Green    | U1N48       |
| 650558    | Orange   | Blue     | U1N46       |
| 650559    | Orange   | Orange   | U1N44       |
| 650561    | Red      | Green    | U1N28       |
| 650562    | Red      | Blue     | U1N26       |
| 650563    | Red      | Orange   | U1N24       |
| 650564    | Red      | Red      | U1N22       |
| 650565    | Yellow   | Red      | U1N102      |
| 650567    | Yellow   | Blue     | U1N106      |
| 650568    | Yellow   | Orange   | U1N104      |
| 650569    | Yellow  | Yellow  | U1N1010     |

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## 9. Sources

**Tilley, Kathy:** SCL Electrical Engineering Support Specialist, subject matter expert, and originator of 6774.20 (kathy.tilley@seattle.gov)

**SCL Material Standard 6774.2** (canceled); "Insulated Aluminum Compression Connectors"